



## Species of Concern

NOAA National Marine Fisheries Service

## Beluga whale

*Delphinapterus leucas*

Cook Inlet DPS



Photo credit: NMFS.

### KEY INFORMATION

#### Areas of Concern

Cook Inlet DPS, Alaska.

**Year Identified as “Species of Concern”**  
1988

#### Factors for Decline

- Subsistence harvest
- Shipping
- Oil/gas production and exploration
- Pollution
- Habitat destruction and alteration
- Commercial and recreational harassment
- Noise

#### Conservation Designations

IUCN: Critically Endangered

#### Brief Species Description:

The beluga whale *Delphinapterus leucas* is a small, white toothed whale. Adult belugas may reach a length of 16 feet (5 m), though average size is 12 to 14 feet. Males may weigh about 1,500 kg (3,307 pounds) and females 1,360 kg (2,998 pounds). Calves are born dark gray to brownish gray and become lighter with age. Beluga whales lack a dorsal fin and do not typically produce a visible “blow” on breathing at the surface. Females typically give birth to a single calf every two to three years. Gestation is about 14 months. Calving in Cook Inlet is thought to occur from mid-May to mid-July (Calkins 1983). Reports on the age of sexual maturity vary from 10 years for females to 15 for males (Suydam et al. 1999), to 4 to 7 years for females and 8 to 9 years for males. Beluga whales may live more than 30 years.

Beluga whales are covered with a thick layer of blubber that accounts for as much as 40 percent of its body mass. This fat provides thermal protection and stores energy. Beluga whales have a well-developed sense of hearing and echolocation, and are reported to have acute vision both in and out of water. They are extremely social animals that typically migrate, hunt, and interact together in groups of 10 to several hundred. They are opportunistic feeders, eating fishes including anadromous eulachon and salmon as well as octopus, squid, crabs, shrimp, clams, mussels, snails, sandworms, and fishes such as capelin, cod, herring, smelt, flounder, sole, sculpin, lamprey, and lingcod. Cook Inlet belugas tend to be found in water barely deeper than their body size. Beluga whales are circumpolar in distribution. Five distinct [stocks](#) occur in Alaska; the Cook Inlet stock is the most isolated.

#### Rationale for “Species of Concern” Listing:

##### **Demographic and Genetic Diversity Concerns:**

Of the five stocks of beluga whales in Alaskan waters, the Cook Inlet stock is the most isolated; genetic samples suggest they have been isolated for several thousand years (O’Corry-Crowe et al. 1997). The Cook Inlet beluga has been severely reduced in numbers over the last several decades. NMFS estimates this population numbered as many as 1300 in the late 1970s. By the 1994 the estimate was 653. The current estimate is 278 whales. The Cook Inlet stock of



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beluga whales is designated as depleted under the MMPA and is a candidate species under the ESA. The low reproductive rate of beluga whales is also a concern.

#### ***Factors for Decline:***

Human-caused mortality, primarily subsistence harvest by Alaska Natives, has been the most significant source of mortality within this population during recent times. Subsistence harvest is the only factor that can be identified as influencing the decline of the population from 1994 to 1998 when 67 whales per year were harvested, prompting the "depletion" designation. Cook Inlet is highly developed, and human activity is expected to increase in the future. Potential human-caused threats include shipping, oil/gas production and transport, indirect and direct adverse effects from commercial fishing, pollution, habitat destruction and alteration, harassment due to increasing commerce and recreation in the Inlet, and noise. Natural threats from predation and disease are also potentially of concern (NMFS 2005). Predation by killer whales is estimated to be at least 1 animal per year (Shelden et al. 2003). This is just below a level that would lead to population declines in some models (NMFS, unpublished). Stranding are common in this DPS and seem to result from avoidance of killer whales plus other unknown causes (NMFS 2005).

#### **Status Reviews/Research Underway:**

NMFS found in June 2000 that listing the stock as threatened or endangered is not warranted (65 FR 38778; June 22, 2000). Because this stock has not shown significant evidence of recovery, NMFS initiated a second Status Review in the spring of 2006 (71 FR 14836; March 24, 2006). NMFS was subsequently petitioned to list this stock as threatened or endangered under the ESA, and NMFS found that the petition presented substantial information indicating that the petitioned action may be warranted (71 FR 44614; August 7, 2006). This finding initiated a one year period in which a status review is being conducted. During this time this DPS is considered a Candidate species.

#### **Data Deficiencies:**

NMFS (2005) draft conservation plan for the species provides detailed information on research needs to ensure conservation of the species in relation to the threats discussed above. A final version should be published soon.

#### **Existing Protections and Conservation Actions:**

A draft conservation plan has been developed under the MMPA (NMFS 2005) that details many proposed and current conservation actions. The plan sets a goal of a minimum population of 780 animals before this DPS would be considered not depleted. This is expected to take a minimum of 30 years. Management of the Alaskan Native subsistence fishery is through a Cooperative Agreement between NMFS and the Cook Inlet Marine Mammal Council. A final version of the conservation plan should be published soon.

#### **For Further Information:**

<http://www.fakr.noaa.gov/protectedresources/whales/beluga.htm>

<http://www.fakr.noaa.gov/protectedresources/whales/beluga/mmpa/draft/conservationplan032005.pdf>



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### References:

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- National Marine Fisheries Service. 2005. Draft conservation plan for the Cook Inlet beluga whale (*Delphinapterus leucas*). NMFS. Alaska Fisheries Science Center, Juneau, Alaska.
- O'Corry-Crowe, G.M., R.S. Suydam, A. Rosenberg, K.J. Frost, and A.E. Dizon. 1997. Phylogeography, population structure and dispersal patterns of the beluga whale *Delphinapterus leucas* in the western Nearctic revealed by mitochondrial DNA. *Molecular Ecology* 6:955-970.
- Shelden, K.E.W., D.J. Rugh, B.A. Mahoney, and M.E. Dahlheim. 2003. Killer whale predation on beluga whales in Cook Inlet, Alaska: implications for a depleted population. *Marine Mammal Science* 19:529-544.
- Suydam, R., J.J. Burns, and G. Carroll. 1999. Age, growth, and reproduction of beluga whales from the eastern Chukchi Sea, Alaska. Paper presented to the Alaska Beluga Whale Committee workshop, March 30-April 1, 1999. 5 p.

### Point(s) of contact for questions or further information:

For further information on this Species of Concern, or on the Species of Concern Program in general, please contact NMFS, Office of Protected Resources, 1315 East West Highway, Silver Spring, MD 20910, (301) 713-1401, [soc.list@noaa.gov](mailto:soc.list@noaa.gov); <http://www.nmfs.noaa.gov/pr/species/concern/>, or Brad Smith, NMFS, 222 West 7th Avenue, Box 43, Anchorage, AK, 99513, (907) 271-3023, [Brad.Smith@noaa.gov](mailto:Brad.Smith@noaa.gov).